

# Evaluating the local use of mangroves as a source firewood in Sri Lanka

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## Abstract

Mangrove ecosystems provide an array of products and services that support the well-being of the livelihood of coastal communities. Mangrove wood is one of the major products from Mangrove ecosystems and it is used as firewood, studs for houses, rafters, joists, telegraph poles, fences, bridges, railway sleepers, poles for fish traps, and for canoes and boats. Among the mangrove products, the fire wood has become one of the top uses of mangrove woods in Sri Lanka and extraction of firewood is generally practiced by mangrove dwellers in unsustainable way. The objective of this study was to study the intensity of collection and selectivity of species in firewood extraction from mangrove forests and its possible impacts on mangrove forests in Sri Lanka.

Three mangrove forests with higher species diversity as one from each of southern, western and eastern coasts (i.e. Rekawa, Pambala and Batticaloa Lagoons respectively) were selected. A questionnaire survey associated with *in situ* observations on the 'firewood use' was conducted in villages around each of the mangrove forests to find the species selection and the intensity of extraction in firewood extraction by mangrove dwellers. At the same time, firewood qualities such as Hardness, Cleavability Combustibility, Calorific value, Smokiness and extent of Cracking and Sparking etc. of mangrove wood available in the three forests were assessed in the laboratory in order to rank true mangrove species in the firewood quality.

The results revealed a higher variability among true mangroves in fire wood qualities placing Rhizophoraceae species at the top and *Excoecaria agallocha* at the bottom. As the extraction of fire wood is carried out in unsustainable way, the selective extraction of high quality fire wood may lead the forest to be dominated by low quality fire wood species. As an example, the *E. agallocha* is never used as a fire wood and the timber of this species is not used for any other purpose also. The ultimate result of such selective human impacts could lead the mangrove forests to be degraded in terms of biological diversity.

## Keywords

firewood, Sri Lanka, cryptic ecological degradation